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Notice of Allowability	Application No.	Applicant(s)	
	10/812,378	WU ET AL.	
	Examiner	Art Unit	
	Scott Bauer	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment of 5/25/06.
2. ☒ The allowed claim(s) is/are 1, 2, 5-9, & 12-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Powers (Reg. No. 47,006) on 16 AUG 06.

The application has been amended as follows: In claim 1 at line 9, after "circuit", insert --, wherein the NMOS transistor is realized by using two asymmetric NMOS transistors--.

In claim 8 at line 9, after "circuit", insert --, wherein the NMOS transistor is realized by using two asymmetric NMOS transistors--.

Cancel claims 3, 4, 10 & 11.

Reasons for Allowance

2. Claims 1, 2, 5-9, & 12-19 are allowed.

3. The following is an examiner's statement of reasons for allowance:

4. Claims 1 & 8 are allowable because the prior art of record does not teach or fairly suggest an output buffer having an NMOS transistor coupled to a PMOS transistor; an ESD protection circuit having a parasitic silicon controlled rectifier (SCR) integrated therein, and coupled to the output buffer, wherein the NMOS transistor is realized by using two asymmetric NMOS transistors.

Chen et al. (US 2004/0100746) in Fig. 23, teaches an output buffer (500-p) having an NMOS transistor coupled to a PMOS transistor with an ESD protection circuit having a parasitic silicon controlled rectifier integrated therein, and coupled to the output buffer. However, Chen et al. does not teach that the NMOS transistor is realized by using two asymmetric NMOS transistors. Further there would be no motivation to realize the NMOS transistor of Chen et al. using two asymmetric transistors as it would destroy the intrinsic SCR created by the output buffer created by the NMOS and PMOS transistors of Chen et al.

Lee, (US 6,309,940) in figure 1, also teaches an ESD protection circuit integrated with an output buffer comprising an NMOS and PMOS transistor, however, Lee does not teach that the NMOS transistor is realized with two asymmetric NMOS transistors.

5. Claims 2 & 5-7 are allowable as they depend from Claim 1, which is also allowable.

6. Claims 9 is allowable as it depend from Claim 8, which is also allowable.

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7. Claim 13 is allowable for reasons given in the amendment received 25 May 2006.

8. Claims 14-19 are allowable as they depend from Claim 13, which is also allowable.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ker et al. (US 2003/0007301) teaches a low voltage triggered SOI-SCR device for ESD protection wherein a diode string is coupled to the an NMOS transistor between the source and ground for increasing the SCR holding voltage.

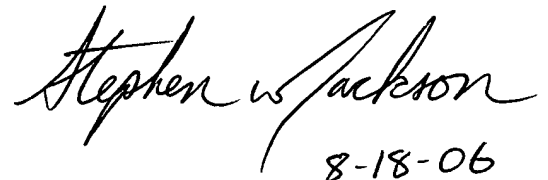
10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance." Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bauer whose telephone number is 571-272-5986. The examiner can normally be reached on M-F 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SAB
17 AUG 06



8-18-06

STEPHEN W. JACKSON
PRIMARY EXAMINER